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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--------------------------------------|-------------|----------------------|---------------------|------------------|
| 10/673,682 | 09/30/2003 | J. Edward Colgate | 007448-0306121 | 1344 |
| 909 | 7590 | 05/31/2005 | EXAMINER | |
| PILLSBURY WINTHROP SHAW PITTMAN, LLP | | | TRAN, KHOI H | |
| P.O. BOX 10500 | | | ART UNIT | |
| MCLEAN, VA 22102 | | | PAPER NUMBER | |
| | | | 3651 | |

DATE MAILED: 05/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/673,682 | COLGATE ET AL. | |
| | Examiner | Art Unit | |
| | Khoi H Tran | 3651 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 and 35-44 is/are pending in the application.
- 4a) Of the above claim(s) 3, 13, 18 and 26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4-12, 14-17, 19-25, 27 and 35-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09/30/2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

KHOI H. TRAN
PRIMARY EXAMINER

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

ML

DETAILED ACTION

The request filed on 04/11/2005 for a Request For Continued Examination (RCE) under 37 CFR 1.114 based on parent Application No. 10/673,682 is acceptable and a RCE has been established. An action on the RCE follows.

Drawings

1. The drawings are objected to because Figures 1A and 1B are not in proper condition for scanning. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

Art Unit: 3651

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 36, 40, and 44 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The original specification does not support the claimed function of "estimating an amount of oscillation in the support frequency mode associated with a torsional oscillation". The original specification does not describe how the controller would be able to specifically recognize torsional oscillation. According to the elected embodiment, the controller only recognizes the angle of deflection regardless of the type of oscillations. The torsional oscillation was only mentioned as a result of an out-of-phase oscillation. There's no specific frequency associated with the torsional oscillation.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1, 35, 37, 39, and 41 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In regards to claims 1, 37, and 41, it is not known which "lowest natural frequency" Applicant is referring. It is thought that each object only possesses one

Art Unit: 3651

natural frequency. There's no numerical value presented in the specification to support the understanding of "lowest natural frequency".

In regards to claims 35, 39 it is not known which "higher natural frequency mode" Applicant is referring. It is thought that each object only possesses one natural frequency. There's no numerical value presented in the specification to support the understanding of "higher natural frequency mode".

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 2, 4, 11, 12, 14-17, 19, 27, 35-44 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Laundry et al. 6,796,447.

Laundry '447 discloses an intelligent assist device (IAD) per claimed invention. The IAD comprises an overhead moveable trolley (Figures 1 and 2). The IAD comprises a cable 21 that extends down from said trolley and connecting to a load 20. The IAD comprises an angle sensor 25 coupled to the cable to sense a characteristic of motion imparted by a human operator to the load 20. The IAD comprises a controller operatively coupled with the sensor and the trolley to control the movements of the trolley. Said controller estimates an amount of oscillation in the cable that does not correspond to the motion imparted by the human operator and adjusts the movements

Art Unit: 3651

of the trolley based thereon. The oscillation is described as a pendulum effect, column 2, lines 39-41. It is at least obvious, if not inherent that the pendulum effect that does not correspond to the motion impart by the human operator would include in-phase, out-of-phase, torsional, or self-sustain oscillations. This is due to the fact that the center of gravity of the load is at a different location than the supporting cable and the natural frequencies of both the load and the cable are different. The pendulum effect constitutes the oscillation in a higher frequency band. Laundry '447 controller filters at least a portion of the signals from the sensor that are indicative of the oscillation in the support.

In regards to claim 12, it is obvious that cable, rope, and chain for supporting a load in Laundry '447 are functionally equivalent and, therefore, interchangeable.

8. Claims 1, 11, 12, 14-16, 27, and 35-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taylor 6,575,317.

Taylor '317 discloses an intelligent assist device (IAD) per claimed invention. The IAD comprises an overhead moveable trolley (Figures 1 and 2). The IAD comprises a cable 21 that extends down from said trolley and connecting to a load 20. The IAD comprises sensor 25 coupled to the cable to sense a characteristic of motion imparted by a human operator 11 to the load 20. The IAD comprises a controller operatively coupled with the sensor and the trolley to control the movements of the trolley. Said controller estimates an amount of oscillation in the cable that does not correspond to the motion imparted by the human operator and adjusts the movements of the trolley based thereon. The oscillation is described as a pendulum effect, column

2, lines 20-25. It is at least obvious, if not inherent that the pendulum effect that does not correspond to the motion impart by the human operator would include in-phase, out-of-phase, torsional, or self-sustain oscillations. This is due to the fact that the center of gravity of the load is at a different location than the supporting cable and the natural frequencies of both the load and the cable are different. The pendulum effect constitutes the oscillation in a higher frequency band.

In regards to claim 12, it is obvious that cable, rope, and chain for supporting a load in Taylor '317 are functionally equivalent and, therefore, interchangeable.

9. Claims 5-7, 9, 10, and 20-22, 24, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laundry et al. 6,796,447 in view of Kato et al. 6,460,711.

In regards to claims 5, 9, 20, and 24 Laundry '447 discloses all elements per claimed invention as explained in paragraph 7 above. However, it is silent as to the explicit mentioning of a plurality of low pass filters and band pass filter(s) for filtering out portion of the signals from the angle sensor.

Kato '711 discloses an anti-oscillation system for a moving trolley. Kato '711 teaches that low pass filter and band pass filter can be used to filter out noises from detected signals.

It would have been obvious for a person with ordinary skill in the art, at the time the invention was made, to have provided to Laundry '447 with plurality of low pass filters and band pass filter because they filter out noises from the detected signals, as shown by Kato '711.

In regards to claims 6, 7, 10, 21, 22, and 25, Laundry '447 discloses all elements per claimed invention as explained above. However, it is silent as to the explicit mentioning of a low cut-off frequency of about 0.5 Hz, or 1.5 Hz, and a high cut-off frequency of about 5.0Hz.

Nevertheless, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to have provided to Laundry '447 filters with a low cut-off frequency of about 0.5 Hz, or 1.5 Hz, and a high cut-off frequency of about 5.0Hz, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F .2d 272, 205 USPQ 215 (CCPA 1980).

10. Claims 8 and 23 rejected under 35 U.S.C. 103(a) as being unpatentable over Laundry et al. 6,796,447 in view of Kato et al. 6,460,711 as applied to claims 5 and 19 above, and further in view of Yucius 4,284,978.

Laundry '447 discloses all elements per claimed invention as explained above. However, it is silent as to the explicit mentioning of a rectifier.

Yucius '978 shows that rectifier can be used to rectify signals within a control system.

It would have been obvious for a person with ordinary skill in the art, at the time the invention was made, to have provided to Laundry '447 with a rectifier because it facilitates the rectifying of signals from the detected signals within a control system, as shown by Yucius '978.

Art Unit: 3651

11. Claims 4-7, 9, 10, and 19-22, 24, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taylor 6,575,317 in view of Kato et al. 6,460,711.

In regards to claims 4, 5, 9, 19, 20, and 24 Taylor '317 discloses all elements per claimed invention as explained in paragraph 8 above. However, it is silent as to the explicit mentioning of a plurality of low pass filters and band pass filter(s) for filtering out portion of the signals from the angle sensor.

Kato '711 discloses an anti-oscillation system for a moving trolley. Kato '711 teaches that low pass filter and band pass filter can be used to filter out noises from detected signals. Using filters for filtering out noises is commonly well known in the art.

It would have been obvious for a person with ordinary skill in the art, at the time the invention was made, to have provided to Taylor '317 with plurality of commonly well known low pass filters and band pass filter because they filter out noises from the detected signals, as shown by Kato '711.

In regards to claims 6, 7, 10, 21, 22, and 25, Taylor '317 modified system discloses all elements per claimed invention as explained above. However, it is silent as to the explicit mentioning of a low cut-off frequency of about 0.5 Hz, or 1.5 Hz, and a high cut-off frequency of about 5.0Hz.

Nevertheless, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to have provided to Taylor '317 filters with a low cut-off frequency of about 0.5 Hz, or 1.5 Hz, and a high cut-off frequency of about 5.0Hz, since it has been held that discovering an optimum value of a result effective variable

involves only routine skill in the art. In re Boesch, 617 F .2d 272, 205 USPQ 215 (CCPA 1980).

12. Claims 8 and 23 rejected under 35 U.S.C. 103(a) as being unpatentable over Taylor 6,575,317 in view of Kato et al. 6,460,711 as applied to claims 5 and 19 above, and further in view of Yucius 4,284,978.

Taylor '317 modified system discloses all elements per claimed invention as explained above. However, it is silent as to the explicit mentioning of a rectifier.

Yucius '978 shows that rectifier can be used to rectify signals within a control system.

It would have been obvious for a person with ordinary skill in the art, at the time the invention was made, to have provided to Taylor '317 with a rectifier because it facilitates the rectifying of signals from the detected signals within a control system, as shown by Yucius '978.

Response to Arguments

13. Applicant's arguments filed 04/11/2005 have been fully considered but they are not persuasive in view of the new ground(s) of rejection.

Conclusion

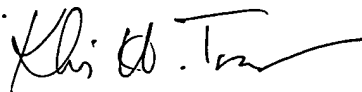
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khoi H Tran whose telephone number is (571) 272-6919. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Katherine Matecki can be reached on (571) 272-6951. The fax phone

Art Unit: 3651

number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Khoi H Tran
Primary Examiner
Art Unit 3651

KHT
05/25/2005